UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS (Boston)

No. 1:23-cv-10511-WGY
Vol. 2, Pages 82-153

UNITED STATES OF AMERICA, et al
Plaintiffs

vs.

JETBLUE AIRWAYS CORPORATION,
et al,
Defendants

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For Bench Trial Before:
Judge William G. Young

United States District Court
District of Massachusetts (Boston)
One Courthouse Way
Boston, Massachusetts 02110
Friday, November 17, 2023

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REPORTER: CHERYL B. PALANCHIAN, RMR, CRR
Official Court Reporter
United States District Court
One Courthouse Way, Boston, MA 02110

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I N D E X

(No exhibits marked)

(Proceedings, 11:24 a.m.)

THE CLERK: Court is back in session. You may be seated.

THE COURT: Mr. Battaglia, you may continue.

MR. BATTAGLIA: Your Honor, we're in the process of printing those 1006s. We'll have those before the end of the day.

THE COURT: That's fine.

GAUTAM GOWRISANKARAN, (Resumed)

DIRECT EXAMINATION, (Cont'd.)

BY MR. BATTAGLIA:

Q. Welcome back, Dr. Gowrisankaran. Prior to the break we were discussing some of the appendices in your report that concern market share and market concentration. I'd like to revisit one more appendix, please. If you could turn to appendix F in your binder. And, Doctor, is this an appendix from your initial report?

A. Yes, it is.

Q. And what's being shown in this appendix?

A. What I showed in this appendix is the same information as appendix E, which are all of the markets where there's a presumption of harm or where they fall in other buckets where they're being significant concentration. And the difference between appendix E and this exhibit is that here what I did is I calculated the market shares using the

ticket data that was -- that were produced by the parties. And the ticket data include all of the fees that passengers paid for ancillary services. So, for instance, for overhead bin space.

Q. All right. Thank you, Doctor. Now if we could go back to your slides.

MR. BATTAGLIA: Ms. Afari, slide 27, please.

(On screen.)

Q. And, Doctor, you mentioned earlier that you used data from the year preceding the merger announcement for market shares. Can you explain a bit more why you used data from that time period?

A. Yeah. Just give me a second to get back to the slide. All right.

So it's most appropriate to use as recent data as are possible, but I wanted to have two criteria in using the more recent data. So, first of all, I wanted to use data from before the merger was announced because any data from after the merger was announced may reflect change incentives from the merger itself and from the litigation surrounding the merger.

So the way to do this that's most consistent with ordinary-course documents is to use data from immediately before it's announced. And I wanted to use one year of data because sometimes in using -- some flights are seasonal and

some demand is seasonal. So if you're thinking about going from Boston to San Juan, for instance, there may be a lot more demand for that in the winter when it's cold in Boston.

Q. And, Doctor, we've heard testimony about exits from both Spirit and JetBlue. Did that change your conclusions?

THE COURT: We've heard data about exits?

MR. BATTAGLIA: We've heard testimony about exits from Spirit and JetBlue from markets.

THE COURT: I understand.

A. No, it doesn't change my conclusions overall. So I've seen that there's been entry, and there's been exit. The exit has removed some of the nonstop overlap markets, and some of those were presumptive entries added a few markets. Most of the markets are unaffected. And the biggest markets are largely unaffected by these decisions.

MR. BATTAGLIA: Slide 28, please.

Q. Doctor, did you update your market-share calculations?

A. Yes, I did.

Q. What did you find?

A. So what I found from this slide is I listed the markets which were presumptive markets under my original market-share calculations. Those are with data that were from 2021 to 2022. And then I looked at the following year, which are the most recent data available for market-share calculations, and I found that most of the markets remain in

both, that they were presumptive markets in the previous year and the more recent year. And that's indicated with check marks in both cases.

There's some markets where they drop off and some that are added. That's at the bottom right. The markets that drop off, and the ones that are added are at the very bottom.

Q. So, Doctor, just to be clear on the slide, the ones, so the two columns, the ones on the left were your prior markets?

A. That's correct. Those were the 51 markets that I testified about earlier.

Q. And the ones on the right are the updated?

A. That's right. If they have a check mark on the right that's because they're presumptive markets using more recent data.

Q. And, Doctor, why did you only do market-share calculations through Q2 2023?

A. Well, that reflects the most recent data that are available. So that's June of this year. And the data on market shares after that or on passenger counts are not available yet.

Q. Thank you.

MR. BATTAGLIA: Slide 29, please.

Q. Doctor, did you conduct any other analyses of nonstop

overlap markets?
A. Yes, I did.
Q. And what analysis did you do?
A. Well, what I did is I saw testimony, for instance, from Mr. Kirby at Spirit about Spirit's exit plans and entry plans, and so I went and I looked at Spirit's data on scheduling. And so that reflects the flights that are operating now. And by now, I mean from July of this year up to June of next year when they have schedules published. And I went to see, based on where Spirit plans to exit or where they plan to enter, or where they already have exited or entered, how does that change the routes where Spirit and JetBlue would overlap with nonstop.
Q. And so what are the lists being shown here, Doctor?
A. The list on the top of this demonstrative, those are the ones where there's exit by Spirit or JetBlue that would mean that those airlines would no longer compete as nonstop overlaps.
Q. And on the bottom, Doctor?
A. Those are routes where there will be entry planned by or in the schedule by Spirit or JetBlue, and where those entries will create new nonstop overlaps between the two airlines.
Q. Now, Doctor, did you identify which of these are presumption markets?

A. No, I did not.
Q. And why not?
A. Because to identify presumption we need to understand shares. And shares are simply not available. These are flights that have -- where people have flown very recently, so the airlines haven't tabulated their data, or where people are planning to fly, like in January of next year, so we don't even know what shares would be in that case.
Q. Thank you.
MR. BATTAGLIA: Slide 30, please.
Q. Now, Dr. Gowrisankaran, earlier in your testimony you explained that you used market shares based on passengers. Why did you decide to use passenger shares in this case?
A. Well, in this case passengers are what makes sense to use because this is a case where if you're buying one plane ticket, then a plane ticket on a different airline could substitute for that first plane ticket. So if you're in Boston and you want to go to Orlando to go to Disney World, then you're thinking, How do I get to Disney World? You're thinking the family might go, maybe I need four tickets for the family, and four tickets on one airline are going to substitute for four tickets on another airline.
So as an economist, it makes most sense to use unit sales, or numbers of passengers, rather than revenues. This is also supported by the horizontal merger guidelines, so I

put a quote here from that. And they specifically say, they identified this case where one of a low-price product can substitute for one unit of a high-price product. They say in that case it's appropriate to use unit sales rather than to use revenues. Because otherwise you're going to understate the significance of low-cost competitors, such as Spirit.

Q. Thank you.

MR. BATTAGLIA: Slide 31, please.

Q. Now, Doctor, even though passenger counts are your preferred measure of market shares, how do alternative market shares affect the number of presumption?

A. I calculated market shares three ways, and those are reflected in the appendices that you asked me about a couple minutes ago. And two of those ways are using revenue shares. And the reason there's two different ways is I used revenue shares both using the DB1B data, and those data include the base prices the passenger is paying, and I also calculated revenue shares using the ticket data that were produced by the parties. And the ticket data include the ancillary fees.

And it doesn't matter which way you calculate these, you get a very similar number of nonstop overlap markets that meet the presumption. So it's 51 nonstop overlap markets with my passenger shares, that's in the leftmost bar

in blue, and then 44 with revenue shares, or 45 with ticket data; 44 with DB1B revenue shares, and 45 with ticket data revenue shares.

MR. BATTAGLIA: Slide 32, please.

Q. So, Doctor, you just explained how the merger will increase market share and market concentration in many markets. Would these increases in share and concentration change JetBlue's unilateral pricing incentives post-merger?

A. Yes, they will.

Q. How so?

A. Well, they're changing in what as economists we call upward pricing pressure. And so I illustrate what I mean by upward pricing pressure with this demonstrative.

So let's think about before the merger and think about what constrains JetBlue from raising prices. So before the merger, and this is on the left, if JetBlue raises its prices a dollar, they'll get more money for every passenger that stays with JetBlue, but it recognizes that some of those passengers are going to switch. So let's say this was the Boston-to-San Juan flight, for instance, and let's say it had a couple of flights and Spirit has a flight at noon for instance. So then some of those passengers are going to take this flight on Spirit at noon. Maybe they switch to other airlines. I illustrated Delta's logo as one such airline. Maybe there's a flight at 2:00 p.m. on Delta that

they can take. And some of those passengers are going to choose just not to fly if JetBlue raises its price.

Now, what's going to happen post-merger is that JetBlue has this incentive to raise prices. The reason for that, if JetBlue kept prices the same, then some of those passengers that were flying, that chose to fly on Spirit at that noon flight, they're still going to fly on that noon fight if JetBlue raised prices. But what's going to happen is Spirit's now part of JetBlue. So JetBlue likes it when passengers fly on Spirit instead of JetBlue because they're still getting the revenues from those passengers.

So the fact that they don't suffer as many customers switching away from them when they raise prices after the merger generates a pressure on this, on JetBlue, to raise prices after the merger. And as an economist we call that an upward pricing pressure. And it's really the incentive that's there because products are substitutes to raise prices after a merger.

MR. BATTAGLIA: Slide 33, please.

Q. Doctor, did you do anything to quantify the upward pricing pressure that you just described?

A. Yes, I did.

Q. And what did you do?

A. So what I did is I did what's called a GUPPI analysis. "GUPPI" is an acronym, it stands for "Gross Upward Pricing

Pressure Index."

So my GUPPI analysis, what it does is it takes a couple of simple inputs, so notably it takes the margins for airlines and then it takes the relative price between the two different airlines, JetBlue and Spirit, and then it just takes some very simple modeling of where people would substitute to, if prices were risen.

And what it does is it calculates what are the incentives to raise prices. And so all of the figures that I show here are saying what are the incentives -- that's what a GUPPI index is -- what are the incentives for JetBlue and for Spirit to raise prices after the merger occurs, if it were to go forward.

Q. Doctor, what were the results of your GUPPI analysis?

A. So I put the results here for the 51 presumption markets, the same ones that I've testified to with the yellow and blue bars, for instance. And what I find, and just looking at the left columns where it says "Spirit," is that Spirit has an incentive to raise prices a substantial amount in a lot of these markets.

And so many of these values, the first 35 of them, the GUPPI is over 10 percent. And that means that if JetBlue were to acquire Spirit, JetBlue would have an incentive doing nothing else, no repositioning or anything, but just a straight unilateral incentive to raise Spirit's prices by

10 percent or more in 30, 35 of these markets.

Q. And, Doctor, is this analysis consistent with defendants' post-merger plans?

A. Yes, it is.

Q. How so?

A. What the defendants want to do is that they plan to eliminate Spirit after the merger. And Spirit offers low prices. So this analysis, part of the reason that there's an incentive to raise prices on Spirit is because the prices are low. And what the defense wants to do by eliminating Spirit, it's effectively the same as saying we're raising the price so high that nobody can choose Spirit.

So all in all, these incentives that I'm seeing in the GUPPI, it doesn't surprise me that the defendants' plans for the merger are very consistent with them.

MR. BATTAGLIA: Slide 34, please.

Q. All right, Doctor. I'd like to switch topics and take a look at your analysis of the likely competitive effects from this merger. And first let's look at the econometric framework you've implemented to evaluate competitive effects.

Dr. Gowrisankaran, at a high level can you please explain your approach for analyzing the likely competitive effects of this transaction?

A. Yes. So what I do as an economist and econometrician

here is, and this is a pretty standard way of doing this, is to say conceptually what would the world look like if the merger were not to go forward, and then what would the world look like if the merger were to go forward, and then to ask what's the difference between those two worlds.

Q. And, Doctor, how does the elimination of Spirit factor into this analysis?

A. Well, what's particular about this particular proposed merger is that the parties have indicated that they plan to eliminate Spirit as a competitor from the market. And so because the parties want to eliminate Spirit and turn all the Spirit planes, and this whole Spirit business model, get rid of it and turn those planes into JetBlue planes, what that means is that there's a potential for consumer harm and for net harm even in markets where JetBlue currently doesn't compete.

And the reason for this is that the merger will result in the loss of Spirit Airlines even in markets where Spirit is there and JetBlue isn't there. And so that's one thing that's different from the standard analysis, and one thing where I really want to take that into account in order to get an accurate view of the competitive effects of this merger.

MR. BATTAGLIA: Slide 37, please.

Q. Doctor, what quantitative analysis did you rely on to

identify the likely competitive effects of the proposed merger?

A. What I did is because, as I said, the proposed merger will eliminate Spirit in all markets, what I need to do is to understand what would happen as a result of this merger is to say how much value does Spirit bring to the market. How much is Spirit lowering prices for rivals and overall market prices because of being in the market.

And so, as an econometrician, what I wanted to do is to try to find something in the data that most closely resembles the variation that occurs when Spirit is in a market or is not in a market. And what I used was entry events. And these are, in my opinion, reasonable natural experiments that help illustrate what would happen if we have Spirit as a competitor. And then what I can do is to say, well, now understanding what happens if Spirit is entered in the market, I can flip that and say the merger would result in Spirit not being in the market and I could understand how much prices would go up if Spirit were removed from the market.

MR. BATTAGLIA: Slide 38, please.

Q. So, Doctor, how did you use entry events to identify competitive effects?

A. So what I wanted to do to identify competitive effects is to say let me systematically look at all of the entry

events that I can find that are relevant and comparable, and use them to understand what would be the impact, on average, of Spirit entry or of JetBlue entry in lowering prices.

And so I started with all of these data. So I have the DB1B data, and the parties-produced ticket data, and I said let me identify a time period that's relatively recent and where there's a substantial number of entry events, but where it's unaffected by the COVID pandemic. So I settled on a time period of 2017 up to the first quarter of 2019.

Okay. And then I further wanted to rule out entry events that might be caused by some market characteristic that was changing. And so I looked at entry events where, in the previous year, in the previous four quarters, there was no entry of a different carrier.

Q. Doctor, what would be an example of a market structure change?

A. So market structure change might be, for instance, that Delta left a market and then JetBlue entered in a quarter after that. In that case, that wouldn't be something that's necessarily as valid as if just looking at instances where JetBlue entered but no one else had exited. So I didn't include those other entry events, I focused on the ones where there was no market structure change.

Q. And, Doctor, what's being shown by the two examples here on the slide?

A. Well, these are two of the 62 examples where Spirit entered markets, and this is -- these examples show exactly the type of data that's going to -- I'm going to use to identify what the average impact of Spirit is.

So the example on the left is an example that I -- is from an analysis I did, it's in my report, and that is the market of New York to Santo Domingo in the Dominican Republic. And, your Honor, what I find on this is one example of what can occur, which is that when Spirit enters, and that's after the vertical bar, this is on the left graph, Spirit offers low prices. So the yellow line is well below the other lines. But the three airlines that were operating nonstop on that route, they also lower their prices in response to Spirit entering. Okay. That's one example of what can occur.

And on the right is another example I gave. And this example is from Dr. Hill's report. So it's based on an analysis he did, and I just put it here for the Court's convenience, and that's Hartford to Miami. So what happens in Hartford to Miami is there were three airlines operating before, there's a vertical line, and Spirit enters after that. And there's also a yellow bar. And what we see there is that, again, the yellow bar is well below the prices -- well below the other -- excuse me, the yellow line, not yellow bar -- the yellow line is well below the three other

lines.

And what that indicates is that Spirit is entering with low prices. Then what we see is the other airlines, they lower their prices, but it's a more modest reduction in how much they lower the prices than on the New York-to-Santo Domingo route.

My point in showing these two examples is not to highlight that any one example is right, it's rather to say that what I want to do and what I do as an economist is to systematically analyze all the examples that meet the criteria I listed above, and there's 62 of them where Spirit entered, and do a regression analysis that effectively takes the mean price drop when Spirit enters.

Q. And, Doctor, earlier you mentioned that one of your core disagreements with Dr. Hill is that he estimated effects without consideration of Spirit's prices. How is that reflected in these examples?

A. Well, what Dr. Hill is going to do when he calculates net harm is he's effectively going to erase the yellow line. So Dr. Hill's measure of net harm is going to focus, in the left example, on only the three airlines -- Delta, JetBlue and United -- and how their prices change, and he's not going to give credit to Spirit passengers or to the low prices they pay.

And on the right graph, Dr. Hill, he's going to use the

dotted line that he indicates, he calls average rival fare, and that shows, in his estimation, a 6 percent drop in prices. And, again, he's not going to account for Spirit's prices, which are well below those three prices, the average of those three prices.

Q. And, Doctor, you also mentioned that you used a regression analysis. What's the purpose of using a regression?

A. Well, what a regression does is it takes the weighted average of these different entry events. So regression, it's something where I input all the data into a statistical package, and the regression crunches all the data and it comes back with this is the average impact of how much prices changed.

So it's able to take all 62 events, and without having to eyeball them, the regression, in a way that's systematic and that's well-substantiated in economics and econometrics, says this is the average. This is the number that most closely represents what would happen across these events.

Q. And, Doctor, does a regression allow you to control for any factors?

A. Yes, it does.

Q. How so?

A. Well, in a regression such as this I'm going to control for factors that might change over time that are not related

to the entry. And so I'm going to do that by including all these routes, and essentially using routes where there was an entry at a particular time to pick up time-varying factors, such as maybe fuel price changes or other things that might enter.

Q. Thank you, Doctor.

MR. BATTAGLIA: Slide 39, please.

Q. Now, let's take a look at what you found with respect to head-to-head competition between Spirit and JetBlue.

MR. BATTAGLIA: Slide 40, please.

Q. Doctor, what did your entry analysis reveal about head-to-head competition between Spirit and JetBlue?

A. Well, first of all, let me mention that I talked about these 62 Spirit entry events. Of those 62 events, 16 are in markets where JetBlue was already present. And so what I looked at here was I did a regression of what happens to JetBlue prices when Spirit enters using those 16 events. And what I found is that, depending on the specification I chose, JetBlue's prices go down by 10 to 15 percent, on average, when Spirit enters into a market.

And just to be clear, this is based on analysis I did that's in my report. And this -- this is the head-to-head competition between JetBlue and Spirit that would be lost if Spirit Airlines were to be acquired by JetBlue.

Q. And what's being shown on the right side, Doctor?

A. This is an ordinary-course analysis that JetBlue put together. And it's very consistent with what I found. They're looking at price impacts and they're finding them right in the range of what I estimate.

MR. BATTAGLIA: Slide 41, please.

Q. Now, Doctor, on the last slide you gave results for both weighted and unweighted regressions. Can you please explain what that means?

A. Yes. So there's two ways that one can do this regression analysis, and both have some justification in economics and in econometrics. The first way is called an unweighted regression. And what that says is that I should take each of those 16 entry events by Spirit and I should take the average across -- or not I, but the regression will take the average across those 16 entry events to figure out what's the impact of Spirit entering on JetBlue prices.

And this is a well-justified technique. And it's the best technique to use if prices are set market-by-market because it's just taking those 16 entry events and it's treating each of them equally. In my opinion, it's the most appropriate for this case because what we see here is that each route there's a pricing manager, and that pricing manager is deciding how to price. And this is exactly the type of scenario where prices are set market-by-market.

But there's another way to do the regression. And the

other way is what's called a weighted regression. What a weighted regression does is it gives more weight to larger markets. So if there's a Spirit entry in a market that's larger, it's going to weight that more. It's going to do a weighted average and weight that more in the coefficients in what its findings are.

And that's a better approach if each customer's price is set individually, which is not the case here, so I think it's a little less appropriate than using the unweighted regression approach. But the results of the weighted regression are more favorable to the defendants, it turns out. That's what I found after doing it both ways. So I thought it was most useful to the Court if I presented both the unweighted and the weighted regression so that I can give the Court the analysis that I think is most appropriate but also the one that's most favorable to the defendants.

MR. BATTAGLIA: Slide 42, please.

Q. Now, I'd like to turn to what you've done to assess how Spirit more broadly impacts competition in the markets that it serves. Dr. Gowrisankaran, what did you observe with respect to how Spirit affects the prices of all of its competitors?

A. What I observed is very consistent with what I found about how Spirit affects JetBlue prices. So when I look at all 62 events and I say what happens to the average prices

of competitors in those 62 markets where Spirit entered, I find that Spirit lowers prices. And, again, I did that the two ways I talked about, unweighted and weighted. And the results range from 7 to 11 percent fare drop on its competitors when Spirit enters into the market.

Q. Doctor, does this analysis fully capture Spirit's effect on competition?

A. No, it doesn't. And --

Q. And why not?

A. Yeah, well, there's really two reasons for that. One is a reason I testified to a couple minutes ago, which is that this is about Spirit's impact on its rivals' prices. So thinking back to the example of Hartford to Miami, it's not including the yellow line. And I don't know if your Honor would like -- well, I guess it's fine to just, thinking about that example, it just doesn't include that line.

So that's one impact. It's just about rivals and it doesn't include the fact that Spirit has low prices itself and that benefits Spirit customers.

But the second is that it doesn't account for the fact that the mix of passengers on other airlines will change. So what's going to happen when Spirit enters that route of Hartford-to-Miami, well, in other airlines that are operating in that route, like I think there was American and

Delta, they're going to be -- get a mix of more of the business travelers because spirit is getting the cost-conscious travelers. So that mix, business travelers typically pay more for tickets, that's going to be reflected in those prices of those other airlines.

MR. BATTAGLIA: Slide 44, please.

Q. Let's take a look at how the loss of Spirit and Spirit's low prices will affect consumers who prefer low prices.

MR. BATTAGLIA: Your Honor, here I believe we have an animation. I'm not sure if you are looking at your monitor, but I think the slide is also --

THE COURT: Okay.

Q. So, Dr. Gowrisankaran, did your entry analysis reveal anything about the impact of Spirit's prices?

A. Yes. So what I show -- I think it's -- there's a slide on each of them, so there's no need to use the animation, your Honor.

So looking at the first slide, which is all gray, what we see there is that's the Hartford-to-Miami fare distribution. So it's what's called a histogram. And each dot on that is one passenger paying one fare. And so what I see from this is that the passenger, the most typical fare to pay, that's the highest of the bars. If we trace it downward, that's about $140 or $150 each way. And that's

before Spirit entered on this Hartford-to-Miami route.

MR. BATTAGLIA: Next slide.

A. So this is the fare distribution after Spirit entered on that route. And what we can see is that there's a whole bunch of people now who are paying a lot less for tickets. So there's a bunch of people, looking at where the green bars are, that are paying, like -- paying $40 or somewhere in a $20 to $40 range or $40 to $60 range. Those are fares that most people were not paying before, and -- or almost nobody was paying, and now there's a bunch of people that are paying those low fares. Those are exactly the cost-conscious travelers. They're exactly Spirit's core market.

MR. BATTAGLIA: Slide 47, please.

A. So what I did here is I just overlapped the two densities just to show them on top of each other. And what you can see from this -- these graphs overlapped is that what's happening when Spirit enters is that it's really the low end of the fare distribution, those people who are paying under $100, where there's a whole bunch of people now that are able to afford to travel between Hartford to Miami because Spirit has made low-cost air travel, low-priced air travel available. And cost-conscious travelers are the ones who benefit from that.

Q. And, Doctor, what did your analysis show?

A. So just very specifically, what I showed just in numbers is if we want to say what is it -- how much are 90 percent of tickets being priced more or 10 percent of tickets being priced less, before Spirit entered it was $102.50. Only 10 percent of people were paying less than 102 bucks before Spirit entered. And if we look in the year after Spirit entered, 31 percent of tickets were being sold for that low price. And so what Spirit is really doing is not just lowering prices on average, your Honor, but Spirit is also lowering prices exactly for the cost-conscious travelers who are paying relatively little to fly.

MR. BATTAGLIA: Slide 48, please.

Q. And, Doctor, your previous example showed how Spirit entry has a significant effect on fares at the lower end of the fare distribution. Did you analyze how entry by both defendants affect fares along the fare distribution?

A. Yes, I did. And I just want to highlight that the previous example was just one example. And so it's not somewhere where I'd stop as an economist because what I want to do is look at this systematically. This looks at it systematically for both Spirit and JetBlue.

And what I found is that after the -- after Spirit enters at the low end of the distribution, that tenth percentile of fares, Spirit's able to lower prices 33.5 percent, which is pretty consistent with the example I

gave. And JetBlue, it has some impact at the low end of the fare distribution, but it's a lot lower than Spirit. It's only an 18.5 percent reduction in prices when JetBlue enters.

In other words, the bottom line here is that Spirit is more able to lower prices for the cost-conscious travelers that are its target market.

MR. BATTAGLIA: Slide 49, please.

Q. Dr. Gowrisankaran, have you analyzed how Spirit's prices have changed over time?

A. Yes, I have.

Q. And what did you find?

A. What I found is that looking at the last, what is it, six years, from 2017 until now, Spirit prices are the yellow lines. And what I put there is two ways of calculating Spirit prices. Because Spirit offers this unbundled fare model, I put its base fare in and I put the all-inclusive price. That's the price that people pay, that Spirt customers pay, including all the ancillary services.

Those two yellow lines, they're just well below all of the other lines on this graph. What that means is that consistently over the past six years, through the pandemic, before the pandemic, and after the end of the pandemic, Spirit has offered lower prices than the other airlines here. And what the other airlines I'm listing are the

legacy airlines, those are in gray, and JetBlue, which is in black. And what this graph shows is that when you add up JetBlue prices and the legacy prices, they're really pretty similar to each other. And they've been similar for the last six years. But Spirit prices are lower than JetBlue prices or the legacy prices.

MR. BATTAGLIA: Slide 50, please.

Q. Doctor, let's discuss your fourth basis of harm from the loss of Spirit, an increased risk in coordination in relevant markets. And we're on slide 51.

Dr. Gowrisankaran, what is coordination?

A. So coordination, as an economist, the way I define it is when there are multiple firms and they're going to engage in conduct, such as pricing above the competitive level, and the only reason that it's profitable for them to do so is because they know that other firms are going to accommodate them when they end up pricing above the competitive level.

And this definition that I use as an economist is really very similar to what the horizontal merger guidelines define. And I put that in quotes, what they say.

Q. Doctor, what are the ways in which coordination can occur?

A. Well, there's a whole bunch of different ways that we can have coordination, and I illustrated that with the arrows in the middle of this slide. And the arrows are

meant to illustrate that there's a continuum of ways.

So on one extreme is what I'll call explicit agreements. So, traditionally, we would think of these as smoke-filled back rooms where CEOs would get together and they would agree on prices. Now maybe it's CEOs texting or whatever, but the same idea, that it's an explicit agreement.

The other way, the other extreme is what's called parallel accommodating conduct. And what this means is that there's no agreement either explicit or implicit, but maybe these airlines have recognized that in order to work with each other they don't fight too hard on each other's turf, maybe they don't put a lot of capacity where other firms are, or maybe they just price relatively high on their turf, but there's not necessarily any sort of signaling or agreement.

And in the middle, broad middle, is what I'd call implicit agreements. And that's where firms, in this case airlines, may recognize that they have ways of strategies that they'd like to do where they accommodate each other. And when other airlines don't accommodate, when they price too low or expand capacity too much, maybe they have ways of punishing them or fighting them. But they're not actually talking to the other airlines. There's no one picking up the phone, or texting, or whatever that is.

Q. Doctor, what are the economic features of coordination?

A. Well, any type of coordination across this spectrum of effects has really three features in common.

So the first feature is that one thing that firms need to do to be able to coordinate is to have a common understanding of what to do. So how do you coordinate on prices? Well, the easiest way is if you all decide, if you're firms, like this is the prices we're going to coordinate on. So that common understanding is crucial.

The second feature of economics -- second economic feature of coordination is that firms have to have an ability to monitor what their rivals are doing. So how do you know if your rivals are following your pricing strategy? Well, it's sure helpful if you can observe your rivals' prices and see if they're actually following what you implicitly or explicitly agreed to do, or what you've just come to do over time because you're in the industry a long time.

And the third is that there has to be an ability to respond to rivals' deviations. So the most common way that you can respond to rivals' deviations is if they don't go along with the coordination, if they, say, price too low, then you, as a firm, can lower prices where it's going to hurt your rivals. So punishment is one type of response. But any type of coordination has to have some ability to

respond in order to make sure that that coordination is able to be sustained.

Q. Doctor, what is the connection between coordination and your evaluation of coordinated effects with respect to this merger?

THE COURT: I don't understand the question.

MR. BATTAGLIA: Well, your Honor, he was just speaking about features of coordination, and now I'm just connecting that to his analysis of coordinated effects.

THE COURT: So your question is?

MR. BATTAGLIA: What is the connection between the two.

THE COURT: His understanding, like what did he find in this case about coordination?

MR. BATTAGLIA: Just how coordination is related to the notion of coordinated effects.

THE COURT: Well, that appears to mean something to you, but it doesn't mean something to me. So it's got to tell me something. So having -- let me try a question, see if you're okay with my question.

THE WITNESS: Uhm-hmm.

THE COURT: So you have described generally one end of the spectrum is price-fixing, at the other end of the spectrum of, at least concern, is this parallelism.

THE WITNESS: Right.

THE COURT: How does that relate to this case?

THE WITNESS: Well, in this case what I see evidence of is that there is -- there are coordinated effects. I have not seen evidence of explicit agreements, but I have seen evidence of signaling, which I would think of as a type of implicit agreement. And I've also seen evidence of parallel accommodating conduct.

But, your Honor, I think my counsel was just going to ask me about the two words, coordinated effect and coordination.

THE COURT: Well, we'll let him ask.

Q. Well, Doctor, I'll try it this way. Doctor, can you please explain coordinated effects?

A. Yes. So coordinated effects mean how does coordination change as a result of the merger.

THE COURT: I see. All right.

Q. Thank you.

MR. BATTAGLIA: Slide 52, please.

Q. And, Doctor, as part of your analysis of this merger, what did you find with respect to coordinated effects?

A. What I found is that the airline industry is susceptible to coordination. I also found that Spirit has been a disruptive force that has mitigated the risk of coordination, and that post-merger JetBlue would have an increased incentive to participate in coordination.

Q. Doctor, how does this merger affect the three economic features of coordination that you discussed on the previous slide?
A. It affects all of those features. So the first feature is can -- is it easy to come to an understanding. This merger will make it easier to come to an understanding about prices, it makes it easier to monitor rivals' actions, and it makes it easier to respond to deviations and to punish rivals.
Q. Doctor, in your opinion, is the merger likely to increase the risk of coordinated effects?
A. Yes, the merger is likely to have coordinated effects for all of these reasons.
MR. BATTAGLIA: Slide 53, please.
Q. Now, Doctor, what factors did you consider in concluding that the airline industry is susceptible to coordination?
A. Well, there's a number of factors that would make an industry susceptible to coordination that we think of as economists. And they're also all listed in the horizontal merger guidelines.
So the first is transparency in monitoring. So, again, it boils down to asking, do airlines know what fares other airlines are filing, and do they monitor them. And here I see evidence this is absolutely true. So airlines publish

fares with ATPCO. We've seen a lot of ATPCO, for instance, yesterday, from Mr. Lage at Spirit. These make prices transparent to other airlines. Airlines also monitor ATPCO. And this gives airlines an ability to identify competitive actions that are deviating from coordinated outcomes.

The other thing that's there is that there's a lot of sales and they're generally small relative to airlines. So every day, and we've seen testimony about this too, there's millions of fares that are being filed over a year, and thousands every day. And airlines frequently change those fares. So ATPCO transmissions for domestic fares are changed four times a day, and that allows airlines to quickly respond to competitive deviations, and that also is a feature that sustains collusion -- excuse me, coordination, not collusion.

The other -- the third piece of evidence is that, is what's called multimarket contact. And the idea here is that airlines compete with each other in many different routes, and some of those routes are important to one airline and other routes are important to another airline. So just to think of an example, let's think of DFW, Dallas-Fort Worth, to Tucson, Arizona. So that's -- DFW is a fortress hub, as it's called, for American Airlines. So DFW-Tucson is going to be a very important route for American Airlines, so they're going to have most of the

market share on that route.

Now, United Airlines also flies that route. But if you want to fly on United from Dallas to Tucson you'd have to make a connection in Houston. So that route is important to American but not important to United, which means that if United just lowers its fares on that route, it's able to punish American effectively for any deviation from coordinated actions.

But United also flies the route Houston to Tucson nonstop and that's a fortress hub for United. So there's a symmetry to that, which is that that route is important for United and it gives American the ability to punish United by lowering fares from Houston to Tucson with a stopover in Dallas.

And so the fact that these airlines are symmetric, but they both have routes that are important to them but those routes deviate from each other, allows them to essentially punish each other very effectively. And that punishment is what can sustain coordination.

THE COURT: If I understand the thrust of your testimony, at least in this area, these risks are present in any oligopoly and they are increased if you get rid of one of the players and reduce the number remaining. Right?

THE WITNESS: That's right, your Honor. But that's not the only way in which they'll be reduced by this

merger.

THE COURT: What other ways?

THE WITNESS: Well, Spirit's prices are less -- are less transparent to its rivals because they don't file a lot of their prices -- they don't file nearly as many of their prices on ATPCO. Also Spirit has a different fare model, so they operate an unbundled product model, and they don't match legacy prices. So it's very hard to coordinate on a single set of prices since Spirit is going to be offering different prices, but also lower prices. And also Spirit doesn't -- they just don't engage in coordination as much as other rivals do. They don't follow the herd, in their own words.

Finally, your Honor, this merger would make JetBlue look a lot more like a legacy carrier. So it'll increase their symmetry. They would be more of a hub-and-spoke airline, and that would increase the ability for airlines to punish each other in this type of multimarket contact mechanism.

THE COURT: Go ahead.

Q. And, Doctor, did you consider any other factors?

A. Yes, I did.

Q. And what else did you consider?

A. So the last bullet on this slide gives evidence of -- is evidence of past coordination. And what I found there is

that there was a -- the Department of Justice sued the airlines for coordinated practices and they settled with a consent decree in 1994 where they agreed to sop using ATPCO to signal in certain ways. There was also a settlement in 2004 for alleged violations of American Airlines of this consent decree.

MR. BATTAGLIA: Slide 54, please.

Q. And, Doctor, before I ask you a question I just want to point out that we've redacted a portion of this slide. It contains confidential third-party material. It has a red box, in your binder. Please do not disclose that material. Thank you.

Doctor, did you make any observations with respect to how airlines use ATPCO?

A. Yes, I did.

Q. And how did those observations relate to the features of coordination that you previously discussed?

A. Well, what I have observed is that the airlines use ATPCO to attempt to signal each other. And I gave a few examples on this slide of how they signal each other. We've already heard about two of the ways that airlines can signal each other. One way is called a cross-market initiative, or a CMI, and the other way is called flashing.

The basic point of a cross-market initiative is that an airline will lower fares on -- in routes that are important

to a second airline. So, like, routes out of their hubs, for instance. And the lowering of fares might seem like it's good for consumers, but it's meant as a signal to the other airline. It's meant to tell the other airline back off and raise prices.

So as we heard from Mr. Lage, I believe, those prices might last for just a few hours or maybe a day. And then what happens is both airlines give up and they raise prices across the board for -- for -- they raise prices on a broad set of routes. So it's ultimately customers that suffer with CMIs.

What I showed here is an example of a manual that Delta uses to train new pricing analysts. What Delta is training its analysts to do, and this is in the top right of this slide, your Honor, is Delta -- is American is saying -- excuse me, Delta is saying this is how you can see what a CMI is. So they're saying look at ATPCO transmissions and here are the telltale signs that will tell you when another airline is trying to do a cross-market initiative and ultimately trying to punish the other airline that -- American, in this case, is trying to punish United so that both of them will ultimately raise prices.

And what I showed in the bottom right is that there's a lot of information in these ATPCO signals. This is, again, from Delta Airlines. So an example of that is Delta is

telling its pricing analysts when American is filings fares, how do you know if those fares are for initiatives that are about JetBlue, about competition with JetBlue. Well, look for a J in the fourth digit, or something like that, is what Delta is telling its analysts to look at in these American Airlines transmissions.

Q. Thank you, Doctor.

MR. BATTAGLIA: Slide 55, please.

Q. Now, Doctor, you covered some of what's on this slide in response to the Court's question, but could you just, you know, briefly explain how Spirit mitigates the risk of coordination?

A. Yes. And so, your Honor, this is exactly what I was testifying to a couple of minutes ago, that Spirit fares are less transparent to other airlines. So JetBlue's contracts with what are called global distribution systems mean that it must make nearly all its fares available. And so do the big four airlines. But that's not true for Spirit. And so because that's not true for Spirit, other airlines have a harder time understanding exactly what Spirit's fares are going to be and what all the different fares they have available are. They can't just look on ATPCO on these four-times-a-day transmissions.

Spirit also is able to ignore the price initiatives from other airlines. Why is Spirit able to ignore them?

Well, it is their branding that they have no obligation to follow the herd, but it stems from some fundamentals of economics, which is that Spirit has lower costs than other airlines, so they don't have to follow other airlines' prices. They can make a profit even with lower prices. And Spirit has a different business model where they focus on an unbundled business model, and they focus more on these cost-conscious travelers and less on corporate accounts, for instance.

MR. BATTAGLIA: Slide 56, please.

Q. Dr. Gowrisankaran, what's being shown on this slide?

A. This is some empirical evidence on how Spirit prices relative to other airlines. And this is an analysis I did that's in my report. And I put together this analysis based on data from Spirit Airlines. And this is data that I think Mr. Lage testified about yesterday, if I remember correctly. And what this data shows is Mr. Lage is looking at what are the lowest filed fares, the lowest posted prices in nonstop markets where Spirit is.

And what he's trying to look at, and what I looked at in this, when this went out in this exhibit that I did, is I wanted to understand how often does Spirit have lower posted prices than other airlines, than the big four airlines. The big four are Delta, American, United and Southwest. And so those yellow bars are very close to one. They're very high.

And what that indicates is that it doesn't matter which of these types of fares you're looking at, walk-up fares, or 3-day advance purchase, or 7-day advance purchase, Spirit Airlines most often has a lower posted lowest fare than any of the big four. Over 90 percent of the time.

And that's simply not true for JetBlue. If you look at JetBlue Airways, the blue bars, they're about 20 percent, on average. So it's only about one in five times that JetBlue's lowest posted fare is lower than what the big four are charging. And the rest of the time JetBlue is either charging the same as the big four or they're charging something higher than the big four.

MR. BATTAGLIA: Slide 57, please.

Q. Doctor, earlier you mentioned the ability to respond to deviation as an economic feature of coordination. What about Spirit makes it less susceptible to punishment by competitors?

A. So what's different about Spirit, and I highlight this on the left two columns, is that Spirit is not symmetric to the other carriers. So what I mean by that is Spirit, in the markets where it operates, it often has a much lower share than the big four or than JetBlue.

And so specifically, your Honor, I point you to two numbers, that Spirit is the largest passenger share in 40 of the 320 markets in which it operates. So only in one in

eight of the markets where Spirit operates nonstop is it the largest airline in that market.

And if we look at the big four, we look at JetBlue, they're the largest carrier in a far greater percentage of the markets where they operate in. And so this merger, it would get rid of a competitor that's fundamentally asymmetric to the other competitors.

MR. BATTAGLIA: Slide 58, please.

Q. Doctor, why is this merger likely to increase the risk of coordination?

A. Well, at a big picture, what I've illustrated and what I've testified to are the two reasons why, which is that it would eliminate Spirit as a competitor. So it removes a source of disruption. But it also changes JetBlue's incentives. So as a result of this merger, JetBlue's going to become more like a legacy. So it's going to be bigger on many routes in which it operates, and that's going to mean that it's going to give it a greater susceptibility to punishment. It's also going to be more like a hub-and-spoke carrier, so that's also going to mean it's much more symmetric to the big four, and that's going to increase their ability to coordinate.

Q. Doctor, are you aware that the Department of Justice in the NEA case argued that JetBlue is a member?

A. Yes, I am.

Q. Does that assertion affect your conclusions here?
A. No, it doesn't.
MR. CULLEY: Objection, your Honor. None of this is in Dr. Gowrisankaran's reports.
THE COURT: Where is that in his report?
(Whereupon counsel conferred.)
MR. BATTAGLIA: I withdraw the question, your Honor.
THE COURT: All right.
MR. BATTAGLIA: Slide 59, please.
Q. Doctor, you just discussed four separate competitive effects likely to result from this merger. Did you reach any other conclusions in regard to competitive effects?
A. Yes, I did.
Q. And what were those?
A. Well, there's also a number of markets where Spirit has planned to enter, and these competitive effects would also be felt in those markets. Because if this merger were to go forward, Spirit would also be lost as an independent competitor in these markets where Spirit plans to enter.
Q. And do you know approximately how many markets Spirit planned to enter?
A. I reported in my initial report it's over 100 markets, if I remember correctly.
Q. And, Doctor, did you make any observations with respect

to how long Spirit remains in a market after it enters?

A. Yes, I did.

Q. And what did you observe?

A. Well, a couple of things. So in my report I noted that prepandemic when Spirit entered a market it typically stayed in the market. So over 90 percent of the time Spirit remained in the market two years after it entered.

And I also saw testimony from Mr. Kirby at Spirit that said that Spirit invests a lot when they enter in markets, and they only want to enter in markets if they think they could stay. Even in light of the current operational challenges, Mr. Kirby said some of the markets where Spirit has suspended service, like for instance he mentioned a couple of markets from smaller places in Puerto Rico, from Aguadilla and Ponce, he said they're suspending service and hope to return to them.

MR. BATTAGLIA: Slide 60, please.

Q. Doctor, did you quantify the harm resulting from the loss of Spirit?

A. Yes, I did.

Q. I'd like to take a closer look at that quantification.

MR. BATTAGLIA: Slide 61, please.

Q. Dr. Gowrisankaran, what framework did you use to quantify the harm from the loss of Spirit?

A. Well, what I did to quantify the loss was, first of

all, what I wanted to do was estimate how much Spirit is lowering prices when they enter, and then what I want to do is use that estimation to understand what would happen if we remove Spirit from all markets.

And so focusing on the first step of the estimation step, what I'm going to do there or what I did there is I used the same entry events that I -- that I've testified to earlier to understand when Spirit enters a market how much does it lower prices. And so those are the same 62 entry events. But I'm going to do it a slightly different way because what I want to do is to allow the relationship between Spirit's ability to enter and lower prices to be specific to markets.

So specifically what I'm going to do, to do that, is I'm going to recognize if Spirit enters with more planes or more frequency in the market, it's likely to have a bigger impact on lowering prices, but if it enters a bigger market, all else equal, then it's not going to be that determinant in lowering prices because it won't have that much of an impact. So I'm going to measure how much it lowers prices by looking at the number of planes at which Spirit enters relative to the size of the market.

Focusing on the second step of my analysis, what I'm going to do is to say let me look at what would happen if the parties simply moved all of the planes out of the

relevant markets, what would that -- how much would prices be increased.

Q. And as part of that second step did you exclude any markets?

A. I did.

Q. And why?

A. So I excluded a few markets where Spirit either had a huge amount of the capacity or where they -- or where they had a very small amount of the capacity. And the reason I excluded them is that those were out of sample for my estimation. And one of the principles of econometrics is what you'd like to do is, if you're doing prediction, is to predict on a similar set of events from the ones that you're using to estimate what the impact of something is. And so by excluding those markets with very low or very high Spirit frequency, my numbers are conservative because I'm not assessing any harm or net harm in those few markets.

MR. BATTAGLIA: Slide 62, please.

Q. Doctor, let's take a closer look at that first step in your framework that you just described.

A. Uhm-hmm.

Q. How do you estimate the effect of Spirit entry on prices?

A. So what I did to estimate the effect of Spirit entry on prices was I, first of all, I plotted these 62 events. And,

your Honor, what this graph shows is on the horizontal axis, that line exactly, on the horizontal axis I plotted Spirit's relative capacity. And what I mean by that is how many flights a day did they have divided by the number of passengers total in that market. On the Y-axis, or the vertical axis, I plotted the impact of Spirit on lowering prices, so how much did prices change in the year after Spirit entered relative to the year before Spirit entered.

And there's two things that you can see from this graph right away. The first thing is that most of these points are below zero. What that means is that when Spirit enters markets, market prices, this is the market average price, typically goes down in almost all these cases. And the second thing that this shows, this line shows, is that there's a downward slope. If you tried to fit a line through those points you would see that there would be a downward slope to that line. What that's indicating, your Honor, is that the bigger the entry of Spirit, the more it's going to have an impact on lowering prices.

MR. BATTAGLIA: Slide 63, please.

Q. Doctor, what's being shown on this slide?

A. So what I'm showing on this slide, on the left part of it, is the same 62 dots, but I'm showing a regression analysis. And so what a regression analysis does, or regression line does, is I feed all the information on

prices into a statistical package and it says let me try to find -- the statistical package says let me analyze the data and come up with the line that best fits those points.

And in particular what the package identified is that the line that fits those points is a curved line. So I let it be flexible and it picked a line that's curved. So it's not a straight line but it's one where the impact of additional Spirit relative capacity diminishes. So it's always -- so it's -- so the impact is negative on prices, but it diminishes as Spirit gets to be bigger.

Q. Doctor, what do you mean by be flexible?

A. So what I mean by be flexible is that I didn't restrict that line, for instance, to be a straight line, or I didn't restrict it to go through what's called the origin, the zero point. Instead I said let me let the data speak to what that line should be. Let me input the data and let the statistical package come out with the formula for what that line should be.

Q. And, Doctor, what's being shown on the right-hand side of this slide?

A. Well, what I showed on the top right is the mathematical specification that underlies this regression line. And so, if you recall, I testified that I did most of my analyses two ways, with an unweighted regression and a weighted regression. The unweighted one is what I think is

more accurate, but the weighted one is the one that gives results more favorable to the defendants. And so what I showed is the mathematical specifications that underlie these regression lines for both the unweighted and the weighted Spirit regressions.

And on the bottom right what I showed is a document from a ULCC trade group. And they're also looking at the relationship between ULCC size and market prices, and they find something very similar to what I'm finding.

Q. So this document on the bottom right, how is that related to your analysis?

A. So the document on the bottom right really verifies what I'm saying; when ULCC trade groups do this, they find exactly the same thing that I'm finding.

MR. BATTAGLIA: Slide 64, please.

Q. So, Doctor, once you determined the relationship between Spirit entry and market prices, how did you use that relationship to quantify the effects from the merger?

A. So what I did is I applied that relationship to all the markets where Spirit currently operates, or operated during the last time period of my sample, excluding the couple ones that were outliers. So what I showed here is, first of all, I just took that same regression line that I estimated and I'm just plotting it without all the points on here to illustrate it. I'm going to illustrate what I did with one

example in particular, which is Las Vegas to San Francisco.

MR. BATTAGLIA: Next slide, please.

A. So these are the facts about Las Vegas to San Francisco. So if we look at it, Las Vegas, when Spirit entered this route, they had 5.6 flights a day, and there were 6,378 passengers a day in the year before Spirit entered. So dividing 5.6 by 6,378 gives a relative capacity, which is what I'm measuring here, as 0.00088.

What I plotted on this figure, your Honor, is I drew a vertical line as exactly what Spirit's capacity is. The vertical dotted line ends at the point at the yellow line, and that's indicating how much Spirit, on average, lowered prices in the Las Vegas-to-San Francisco market by being in that market.

MR. BATTAGLIA: Your Honor, this is an animation, so I don't believe this appears on your hard copy. My apologies.

A. I think it's there actually, because I have -- I'm looking at the binder so...

Q. Okay. Sorry, Doctor. Proceed.

A. Yeah, I think the next slide is good.

Okay. So what I did here is I took this same graph, but I'm just going to zoom in on the part around 0.00088, that's Spirit's relative capacity. So it's just the leftmost part of the earlier graph, and I just highlighted

here so that we can see this in more detail.

And so what this shows, your Honor, is that looking at that line, and where that dotted line hits it, Spirit had about a 12 percent price decrease from being in that -- from its entry into that Las Vegas-to-San Francisco market.

And next slide, please.

So what's going to happen if this merger were to go forward is that Spirit would be eliminated and prices would go down from -- would go up, excuse me, from their lower level, where they are now, that's indicated on line, back to the baseline level of zero. So that yellow upward arrow is the impact in this market of price increase that would occur just from eliminating Spirit.

MR. BATTAGLIA: Next slide, please. Slide 66.

Q. Doctor, thank you for that example. Did you conduct this analysis for other markets?

A. Yes, I did.

Q. So I know that we're going to talk about JetBlue using Spirit planes, but before we get to that did you calculate an initial harm number?

A. I did calculate an initial harm number, and this is a number I testified to at the beginning of my testimony, which is 4.2 billion or 4.5 billion, depending on whether I use a weighted regression or an unweighted regression.

And I want to stress this is the harm from completely

eliminating Spirit in the relevant markets. But I recognize that the Spirit planes may continue to be used by JetBlue in the relevant markets, and so what I'm going to do is not stop here, but also assume, conservatively, that all the Spirit planes stay in the relevant markets and estimate a net harm number that takes that efficiency claim seriously and tries to understand the net harm that would result to consumers from that.

MR. BATTAGLIA: Slide 67, please.

Q. And, Doctor, how do you refer to the use of Spirit planes post-merger?

A. What I refer to this is, as a conversion-efficiency claim. So the defendants have said that they would take those planes and use them and take advantage of the JetBlue Effect. And I'm going to call that the defendants' conversion-efficiency claim, just to be clear.

Q. Let's take a closer look at that claim.

MR. BATTAGLIA: Slide 68, please.

Q. So, Dr. Gowrisankaran, can you please explain defendants' conversion-efficiency claim in a bit more detail?

A. What the defendants claim is that they're going to take those Spirit planes and they're going to redeploy them as JetBlue planes in the same markets that Spirit serves today. So this is in their network modeling that they've said

they're going to use them in the same markets, and that's going to benefit consumers because of the JetBlue Effect.

But what I -- so I already found that just removing Spirit is going to be -- going to cost consumers over $4 billion, and these claims need to be evaluated with respect to that to understand whether they're certain and substantial enough to offset those $4 billion.

Q. Doctor, did you consider any other of defendants' efficiency claims?

A. No, I did not.

Q. Thank you.

MR. BATTAGLIA: Slide 69, please.

Q. So, Doctor, how credible is JetBlue's conversion-efficiency claim?

A. Well, I think that it's not fully credible in that their incentives are not to do exactly what they've outlined.

Q. And why is that, Doctor?

A. Well, this relates to my GUPPI analysis, which is that the defendants face incentives to raise prices in the relevant markets. And how do you raise prices? Well, one way that you do is that if you raise prices, quantity's going to go down, you reduce capacity. So those same incentives that I talk about in the GUPPI analysis speak to the fact that defendants would have a reason to want to

reduce capacity in the overlap markets. And if they do -- yeah.

Q. And, Doctor, what happens to defendants' claim if they don't use the Spirit --

THE COURT: I'm not clear why. Why would they -- they'd want to reduce capacity so they will fill the planes they are flying and make that more efficient. Have I got it?

THE WITNESS: Partly, your Honor. So defendants would have an incentive to raise prices. And if prices go up then quantity would go down, so they would need less capacity in those markets.

Q. Doctor, what happens to defendants' claim if they don't use the Spirit planes on the same routes Spirit serves today?

A. If they don't use them in part or in all in the same relevant markets there's going to be less benefit on those routes that would offset the harm that I'm finding, the $4 billion in gross harm that I'm finding from removing Spirit.

MR. BATTAGLIA: Slide 70, please.

Q. Doctor, how does your net-harm model account for both the Spirit Effect and the JetBlue Effect?

A. Well, what I need to do to understand whether the Spirit Effect or the JetBlue Effect is bigger is to

understand when Spirit or JetBlue enter markets, on an apples-to-apples basis what happens to market prices. And there's two important facts I'd like to highlight to the Court.

The first is that, as the parties have indicated, I've seen in testimony, I think it was Mr. Hayes, the CEO of JetBlue, if I remember correctly, who said that they cannot get new planes from Airbus until 2029. And so, effectively, what's in short supply right now is airplanes. And they're not going to -- they're not going to be able to get those airplanes. And what they seem to want, what they've said they want most from the merger are the airplanes and the pilots to fly them. So because of that, what it makes sense to do is to think about how much does Spirit or JetBlue, when they enter, on a plane-for-plane basis, affect prices.

And the second important fact that I'd like to bring to your Honor's attention is that when Spirit and JetBlue enter, they enter with different frequencies, on average. So when JetBlue enters a market, they enter with 2.7 flights per day. That's in the second column from the bottom on this demonstrative. And when Spirit enters, they enter with 1.7 flights per day, on average.

And so what that means is that if I want to look at how effective Spirit or JetBlue are in restraining market prices, what I need to do is I need to take their total

effect on restraining prices, and I need to divide by the number of flights per day to get a per-plane effect.

Q. And what did you find when you conducted this analysis, Doctor?

A. When I conducted this analysis, what I found is that the Spirit Effect on reducing market prices is a lot bigger than the JetBlue Effect. So just looking at my unweighted results, I found that the Spirit Effect was a 13 percent reduction in price per plane, that's per flight per day, while the JetBlue Effect was only a little more than half as large, which is a 6.7 percent reduction in market prices. And if I didn't account for this difference in frequency then I'm going to overstate the JetBlue Effect relative to the Spirit Effect. And that's why this is important to control for the frequency per day.

MR. BATTAGLIA: Slide 71, please.

Q. So, Doctor, you just explained the JetBlue per-plane pricing effect is lower than Spirit's. Now I'd like to discuss what that means for prices when JetBlue uses the Spirit planes post-merger?

MR. BATTAGLIA: Slide 72, please.

Q. Doctor, how does your net-harm model incorporate the per-plane effect?

A. So what my net-harm model does is I'm using this relative capacity measure, the same measure I discussed in

my gross-harm model, which is how many flights per day relative to the number of passengers is there on Spirit and on JetBlue.

Q. And, Doctor, what's being shown on the left side here?

A. So what I'm showing on the left side are two regression lines and the points underlying it. So the first set of points are the 62 Spirit entry events. That's exactly the same as the 62 Spirit entry events I showed earlier. And the regression line, the yellow line, is exactly the same also.

The second thing I'm showing is the equivalent statistics and equivalent regression line for JetBlue. And so there were 19 JetBlue entry events over this time period. Your Honor, you can see that the JetBlue events also almost all lie below zero, and you can see that they also have this declining, this downward sloping pattern. And that's reflected in the JetBlue regression line, which is the blue line.

Now, the difference between the yellow and the blue line is that for most of the sample the yellow line lies below the blue line. And what that means is that Spirit is more effective at lowering market prices than JetBlue is, if you look at plane-per-plane, on a plane-per-plane or apples-to-apples basis.

Q. And, Doctor, what's being shown on the right-hand side?

A. So what I showed here is two of the columns, the first and the third, were ones I showed earlier. They're the mathematical formulas that underlie those two regression lines. And the other two columns are the same lines for JetBlue. And, again, I did this two different ways. I used unweighted regressions and I used weighted regresses. I'll present results on both to the Court.

MR. BATTAGLIA: Slide 73, please.

Q. Doctor, how did you use the estimation explained on the last slide to calculate net harm?

A. Well, importantly, I need to distinguish between two types of markets. So there's markets where JetBlue is already operating nonstop and those in which JetBlue is not operating nonstop.

So starting with markets where JetBlue doesn't operate nonstop, this is where Spirit only, I'll call these Spirit-only nonstop routes to indicate that JetBlue isn't there. So what's going to happen as a result of the merger is there would be an exit of Spirit. That will increase prices because the Spirit Effect won't be there. But there will be the entry of JetBlue, and that's going to lower prices and take advantage of the JetBlue Effect.

Now, the second type of markets is nonstop overlap markets. And these are the markets where we're going to see one fewer competitor as a result of the merger. So there

will be an exit of Spirit, but JetBlue's already present so we won't see a de novo competitor. But what I'm doing in my net-harm model is I'm allowing for JetBlue to expand in those markets. I'm specifying that JetBlue expands by exactly Spirit capacity, and I'm allowing for that to reduce prices, and for the JetBlue Effect to get bigger and for that to help consumers.

MR. BATTAGLIA: Slide 74, please.

Q. And, Doctor, could you walk us through an example of your net-harm model for a Spirit-only nonstop market?

A. Yes. So an example of a Spirit-only nonstop market is the one I talked about earlier, one I testified to earlier, that's the Las Vegas-to-San Francisco market. So as I said earlier, Spirit has a relative capacity of 0.00088 and JetBlue does not serve the market nonstop. And so what I'm showing on this demonstrative is the same yellow line, and then there's also a blue line which is what Spirit would do.

And if we could go to the next slide, please.

I'm not sure that your Honor can see this, so maybe we should go to the next, the one that's in my binder.

THE COURT: I'm looking at one that starts, "Net harm calculation."

THE WITNESS: Yes. And I think on the right side it will say, "Net effect, 9 percent price increase" on the bottom right, your Honor.

THE COURT: I see it.

THE WITNESS: Okay.

A. So this is the end of the animation. And so what I showed here is that what's going to happen in this market is that we take that dotted line, it's the same dotted line at 0.00088, that's Spirit's relative capacity. Spirit is going to be eliminated as a competitor post-merger and there's a price increase. That's the vertical yellow arrow at the left, your Honor. But JetBlue is going to enter, and JetBlue is going to enter with the same relative capacity.

Now, the blue line lies above the yellow line at this point, and so that JetBlue Effect is the vertical blue line that slopes downwards -- the vertical blue line that's pointing downwards, excuse me. When I want to figure out the net impact of this -- of this merger in this market where Spirit only is serving nonstop, I have to look at the increase in price removing Spirit, that's on the very left, and the decrease in price from adding JetBlue, and I sum them together. And that's what I get with the red arrow that points upward.

And so what I'm finding here is that the net effect of this merger on increasing price in this particular market is a 9 percent price increase.

Q. So, Doctor, this is an example of how you calculated net harm in a Spirit-only nonstop, but you also calculated

net harm in nonstop overlap markets?
A. That's correct.
Q. So let's take at how your model works in those markets.
A. Okay. So this is an example of a nonstop overlap market, and it's one that I testified to a little while ago with the graph about price changes. So it's Hartford to Miami.
So what I'm going to do here is I'm going to start with the same regression lines that I talked about earlier. These are the yellow and blue lines.
And if we could skip to the next slide, please. And I think we can go -- I think that's a good place to stop because it's -- sorry, excuse me -- yes. I think this is what's on the next slide.
THE WITNESS: Does your Honor see that?
THE COURT: I do.
A. Okay. So what I show here is that in Hartford to Miami, so Spirit has 2.8 flights a day, but it's a lot smaller market than Las Vegas to San Francisco. And so if you look at Spirit's relative capacity, it's about 4 or 5 times larger, so it's 0.0037. Now, JetBlue has a bigger capacity than Spirit, and that's pretty typical that when JetBlue enters, it enters with more flights. So JetBlue has 4.1 flights a day, or its relative capacity, doing that same division, is 0.0054. Okay. So these are just the facts of

the market.

I think we can switch to the next slide. And please keep going. One more.

Okay. So let me talk through what this slide is showing. So what's happening in this market is that Spirit has this relative capacity of .0037, and that's indicated with the dotted line, the left of the two dotted lines, your Honor. That's going to be the price increase from removing Spirit in the market. And when I take that price increase and I look at it on the left, that's the yellow upward arrow. That's the same exercise I did in the markets where Spirit is the -- is operating nonstop but JetBlue does not operate nonstop, like earlier.

Okay. But now what I need to do is I need to understand what's the incremental effect of adding JetBlue capacity. So to start with I need to understand what is the effect that JetBlue has on prices given that it's already operating in the market. And that effect of JetBlue, the effect before the merger, is the second dotted line, the one to the right. That's at 0.0054. And so if we take that, that's the existing JetBlue Effect.

Now, what we need to understand is that JetBlue takes that Spirit capacity of 0.0036, and it -- 0.0037, excuse me, and it adds it to its existing capacity. So what it does is it shifts that Spirit capacity and it gets bigger. And when

JetBlue gets bigger, if you add those two numbers together, you're at almost 0.01. What that means is that the incremental JetBlue Effect is the effect of going down that blue curve from its current point to the point that's at 0.01 or almost 0.01. And when you look at that effect, that's the downward blue arrow that I've now put all the way on the left. So the impact in this market, the net impact, the net harm, is going to be that there's a 15 percent price increase from this merger in this market.

And, your Honor, it's not coincidental that the number I'm finding here of a 15 percent price increase is greater than the number I was finding for the San Francisco-to-Las Vegas route. And the reason it's greater is that there's a loss of one independent competitor. So as a result of this merger, JetBlue and Spirit would no longer compete head-to-head on this route, but my model is giving credit to JetBlue for being a stronger competitor because it's allowing JetBlue to increase its capacity by the full amount of Spirit capacity on this route.

Q. Thank you, Doctor.

MR. BATTAGLIA: Slide 78, please.

Q. Doctor, just going back --

MR. BATTAGLIA: Could we go back to the last slide?

Q. What do you mean by when you said a stronger competitor

JetBlue?

A. What I mean is that JetBlue will have more capacity on this route. What I found is that when JetBlue or Spirit has a higher relative capacity, they're able to restrict market prices more. And so JetBlue, on this route, I'm allowing it to have a higher capacity, and thereby to have a bigger impact on disciplining market prices.

MR. BATTAGLIA: Ms. Afari, can you please pull up appendix G from Dr. Gowrisankaran's initial report?

Your Honor, this is labeled appendix G in your binder.

(On screen.)

MR. BATTAGLIA: Thank you. Please zoom in, Ms. Afari.

Q. Doctor, are you able to see it in your binder?

A. Yes, I am.

Q. So, Doctor, is this an appendix from your initial report?

A. Yes, it is.

Q. And at a high level can you please describe what it is showing?

A. What this is showing is I listed all of the markets where Spirit serves nonstop, and for each of those markets I listed a bunch of different information. And so I'll read the information, what it is, from left to right.

So the first column lists the market. So it lists the endpoint pairs. The second -- the second column lists the quarter of observations. So I'm going to list the harm separately for the four quarters over which I estimate this harm, and that's Q2 -- Q3 2021 up to Q2 2022. The third column lists the number of passengers in this market in this quarter. The fourth column lists the market average price in this market in this quarter. And the next two columns list the harm, the gross harm from the loss of Spirit per passenger and overall. And the final columns list the net harm. And they list the net harm per passenger, and they list the total net harm in that market and quarter. And the final column lists the annualized number for a total net harm.

Q. And, Doctor, just to be clear, for which regression are these results?

A. These results are from my weighted regressions. So these are the ones that are more favorable to defendants but that I think are less accurate.

THE COURT: What determines net harm as opposed to the two columns immediately preceding net harm?

THE WITNESS: Your Honor, the two columns preceding it are the harm from just removing Spirit. So they're the exercise where I look at just the yellow vertical bar. The net harm is the yellow vertical bar minus

the blue vertical bar.

THE COURT: Thank you.

MR. BATTAGLIA: Ms. Afari, if you could please pull up appendix H from Dr. Gowrisankaran's initial report.

THE COURT: Appendix?

MR. BATTAGLIA: Appendix H.

THE COURT: Thank you.

(On screen.)

Q. And do you have that in front of you, Doctor?

A. Yes, I do.

Q. And is this an appendix from your initial report?

A. Yes, it is.

Q. And what's being shown in this appendix, Doctor?

A. This is the same information that I showed in appendix G that I just testified to, except this is the harm and net harm based on my unweighted regressions. So these are the specifications that I think are more accurate, but that are less favorable to the defendants.

Q. Thank you, Doctor.

MR. BATTAGLIA: If we could go back to the slide, slide 79, please.

(On screen.)

Q. And, Doctor, what were the results of your net-harm calculations?

A. Well, focusing on the weighted regressions, these are

the ones that are more favorable to defendants, the bottom-line number is that I find that this transaction would result in a total net harm of $944 million to American consumers annually.

MR. BATTAGLIA: Slide 80, please.

Q. And what are the results being shown here, Doctor?

A. What I showed here is I broke down that $944 million figure into different parts. Here what I'm showing is that the bulk of that harm, $750 million, would be felt in markets where JetBlue and Spirit currently compete as nonstop overlaps and where this merger would result in that competition no longer existing.

MR. BATTAGLIA: Slide 81, please.

Q. And what results are being shown here?

A. What I'm showing here is that these are the remainder of the harm. And this is $193 million, and it's the net harm, the total net harm in markets where Spirit serves nonstop but JetBlue does not serve nonstop.

MR. BATTAGLIA: Slide 82, please.

Q. And, Doctor, what were your net-harm results for your unweighted regression?

A. They're larger than for my weighted regression, as I explained before, and they are $2.5 billion annually in total net harm.

MR. BATTAGLIA: Slide 83, please.

Q. And what result is being shown here, Doctor?
A. What I did here is I used the ticket data that were produced by the parties that include all the ancillary fees that JetBlue and Spirit passengers and passengers on all other airlines paid, and I looked at the net harm there.
Q. And what did you find, Doctor?
A. I found that it's very consistent with my base results. So even if we account for the fees that Spirit passengers pay for checked bags or for overhead bin space, we get a number that's very similar to my base results, in fact, slightly larger, at $1.045 billion annually.
MR. BATTAGLIA: Slide 84, please.
Q. Doctor, can you explain how the net harm you've calculated is distributed across markets?
A. Yes. So what I show on this slide is I show a distribution of this net harm for both the weighted regressions, these are, again, the ones that are more favorable to the defendants, and the unweighted regressions, the ones I think are more accurate.
And focusing on the left part of this slide, the red, the red bars are ones where Spirit and JetBlue compete head to head. And the predicted post-merger change in price is highest in those markets. That's indicated by the fact that all of the red bars -- or most of the red bars, excuse me, are above zero, and they're mostly higher than the gray

bars. And that's the -- and what's in the red bars is the price increase in the nonstop overlaps, and the gray bars is the price increase in the ones that are not nonstop overlaps. And even for the gray bars, the majority are bigger than zero, but some are less than zero.

THE COURT: I think this is a good place to stop.

Have we got a packet of the exhibits that you wish to come from this? You do.

MR. DUFFY: We do, your Honor. It will take us a minute to get everything passed out but we can do that now, if you would like.

THE COURT: Well, no, I'll recess and you can do the passing and it will get to me.

At present the government has used up seven days, one hour, five minutes. The defense has used up four days, forty-five minutes.

Have a good weekend. We'll recess and we'll start promptly at 9:00 a.m. on Monday. We'll stand in recess.

THE CLERK: All rise.

(Proceedings adjourned.)

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C E R T I F I C A T E

I, Cheryl B. Palanchian, Court Reporter for the United States District Court for the District of Massachusetts, do hereby certify that the foregoing pages are a true and accurate transcription of my shorthand notes taken in the aforementioned matter to the best of my skill and ability.

/s/ Cheryl B. Palanchian 11/18/2023
CHERYL B. PALANCHIAN

Registered Merit Reporter
Certified Realtime Reporter